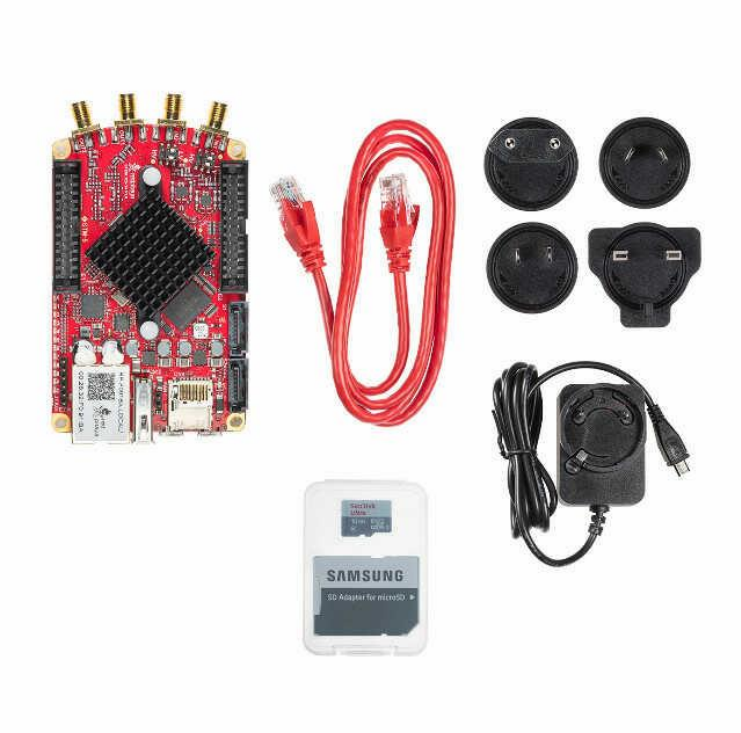
# STEMlab 125-14 Starter Kit




Introducing the Red Pitaya STEMlab 125-14 Starter Kit, a versatile and powerful all-in-one measurement solution designed to meet your measurement and testing needs. This starter kit is perfect for electronics enthusiasts, hobbyists, and professionals alike.

STEMlab 125-14 is a programable open-source digitizer, our most versatile and popular product, introduced to the market in 2013 when Red Pitaya was established. Since then it has been used in a wide variety of contexts, from hobbyists and ham radio operators to industry, research, and space applications.

The Red Pitaya STEMlab 125-14 Starter Kit offers a wide range of functionalities, including an oscilloscope, spectrum analyzer, signal generator, and more. With its high-performance capabilities, you can accurately measure and analyze signals with ease.

This kit is equipped with user-friendly software, allowing you to control and visualize your measurements conveniently. Its compatibility with popular programming languages such as Python and MATLAB enables seamless integration into your existing workflow.

Whether you are working on educational projects, research, or professional applications, the Red Pitaya STEMlab 125-14 Starter Kit provides a reliable and efficient solution for your measurement and testing requirements.

**Key features:**
– Small form factor multi-instrument
– Dual-Core ARM Cortex-A9 MPCore Xilinx ZYNQ 7010 SoC (CPU & FPGA)
– FPGA and CPU integration for enhanced performance
– Fast sampling speed:125MSPS, for the two simultaneous inputs
– And the same fast generation speed for the two outputs
– Open-source design for customization and flexibility
– Ethernet connectivity and optional WiFi dongle
– Open-source software code available with application examples
– Works with Linux, Windows PC, Android, IOS, basically anything with a web browser
– Free web apps (oscilloscope & signal generator, spectrum, Bode and logic analyzer, SDR, VNA, PID)
– Can be controlled remotely using C, LabVIEW, MATLAB, Python, or Scilab
– Can be programmed to meet custom needs

**What is in the box**

– Red Pitaya STEMlab 125-14 digitizer board
– SD card (16GB, class 10)
– Ethernet cable (1m)
– Power supply (5V, 2A)

**RAM**-512MB (4Gb)
**System memory**- Micro SD up to 32GB
**Ethernet**- 1 Gbit
**USB**- USB 2.0
**WIFI**- Using Wi-Fi dongle

# RF outputs

| | |
|---|---|
| **Channels** | 2 |
| **Sample rate** | 125MS/s |
| **DAC resolution** | 14 bit |
| **Full scale voltage range** | ± 1V |
| **Load impendance** | 50 Ω |
| **Shortcut protection** | Yes |
| **Typical raising/falling time** | 2V /10ns |
| **Bandwidth** | DC-60MHz |

## Extension connector

| | |
|---|---|
| **Digital IOs** | 16 |
| **Analog inputs** | 4 channels 0-3.5V 12bit |
| **Analog outputs** | 4 channels 0-1.8V 12bit |
| **Communication interfaces** | I2C, SPI, UART |
| **Available voltages** | – 4V, + 3.3V, + 5V |

# Synchronisation

| | |
|---|---|
| **Trigger input** | Through extension connector |
| **Daisy chain connection** | Over SATA connection |
| **Ref. clock input** | N/A |

# More

| | |
|---|---|
| **Use case** | Academia, Industry |
| **Weight** | 0,5 kg |
| **Dimensions** | 22 × 15 × 7 cm |